

MONTHLY REPORT

1 April 1959 - 30 April 1959

RESEARCH AND DEVELOPMENT BRANCH
ENGINEERING STAFF

RESEARCH AND DEVELOPMENT LABORATORY

PROJECTS AND ACTIVITIES

2004-118 R-744/PRD RECEIVER
Project Engineer: [REDACTED]

25X1A

The tests are completed and they indicated that the performance of this receiver is excellent. The report is in process of being published.

2004-143 ANTENNA MATCHING TRANSFORMER TR-103
Project Engineer: [REDACTED]

25X1

The report on this transformer has been published and distributed. This project is complete.

2004-147 THERMOELECTRIC GENERATOR BC-7
Project Engineer: [REDACTED]

25X1A5a1

25X1

The unit under test failed during the test. The project will be continued upon receipt of another unit.

25X1A2d1

2005-114 [REDACTED] RECORDER
Project Engineers: [REDACTED]

25X1A9a

The tests on this unit are complete and the report is in process. Deficiencies that were noted: high noise level and poor magnetization of the tape.

2007-41 TAPE RECORDER, TRIX, MODIFICATION
Project Engineers: [REDACTED]

25X

Due to higher priority work assigned to the Mechanical Shop during this reporting period, this project was set aside. Work will resume the first week in May.

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2007-49 RT-3 MODIFICATION

Project Engineers: [REDACTED]

25X1A

The modification of two additional RT-3 transmitters has been completed. Loading coils were provided for a premax whip and an RS-16 whip for each transmitter. A total of four RT-3 transmitters have now been modified. Twenty-seven battery cases for use with the RT-3 are being built and are approximately 50% completed.

2007-51 RR/D-11 RECEIVER

Project Engineers: [REDACTED]

25X1

Three units were received from the manufacturer for testing. Tests indicated that the units were not operable and they were returned to the manufacturer for correction.

25X1A5a1

2007-52 [REDACTED] BEACON

Project Engineers: [REDACTED]

25X1

Three units were rebuilt and placed in operating condition. This included fabrication of antennas, battery cases and connectors.

2045 AUTOMATIC TAPE PRINTER, TP-3

Project Engineers: [REDACTED]

25X1

Four production run TP-3 motors have been received. The motors will be mounted for testing and final assembly in TP-3 units and eight additional TP-3 cases will be modified to accept the AS-3 interconnection plugs.

2097 RS-18, TRIPHASE COMMUNICATIONS SYSTEM

Project Engineers: [REDACTED]

25X1A

Aid was given in the repair of three RS-18 units.

2121 OS-4, EVALUATION OF VARIABLE FREQUENCY OSCILLATOR

Project Engineers: [REDACTED]

25X1A

Tests have been completed on this unit and the report is in process. Tests have indicated that the performance of the OS-4 was satisfactory except in minor areas which have also been mentioned by the contractor.

2126 PS-3, QUICK REACTION FACILITY

Project Engineer: [REDACTED]

25X1

Forty units were tested and accepted at the contractor's plant. A memorandum was written to the files and the project was closed.

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2147 CB-13 RECORDER

Project Engineer: [REDACTED]

25X1A9a

The report on this unit is being typed. The unit was found to be unacceptable because of high noise level on channel 1, inoperative standard oscillator and variation in speed of the capstan drive motor.

2510 VARIABLE FREQUENCY AUDIO OSCILLATOR, IN-1

Project Engineer: [REDACTED]

25X1A9a

Cast cases have been ordered for the IN-1 which complete procurement action for the project.

2512 CV-2A and CV-5 CONVERTERS

Project Engineers: [REDACTED]

25X1A9

A capacitor considerably more economical than the Stoddart Capacitor used in the CV-2A has been ordered. A package design suitable for casting will be completed as soon as the suitability of the substitute capacitor is definitely established. Circuit design is otherwise complete.

A 3 to 30 mc converter (CV-5) has been breadboarded. An IF stage was added to insure adequate gain at the high end of the band. Effort is now being made to achieve a CV-5 layout that will permit packaging in the same case that will be cast for the CV-2A.

2514 TRANSMITTER ADAPTERS, TA-1A and TA-3

Project Engineer: [REDACTED]

25X1A9

A prototype TA-3 which covers the frequency range from 3.5 to 22 mc is being fabricated. Characteristics of the TA-1A and TA-3 adapters will then be determined and compared prior to additional fabrication.

2515 TA-1A TRANSMITTER ADAPTOR MODIFICATION

Project Engineers: [REDACTED]

25X1A6a

25X1A9

Performance of this unit was superior to that of the [REDACTED] model. The modulator is capable of only 25% modulation of the carrier.

A memorandum to the files was written.

2520 MODIFICATION OF REVERE RECORDER, TE-1

Project Engineer: [REDACTED]

25X1A9

The modified Revere Recorder TE-1 will be further modified to make possible a more accurate indication of tape speed and also to provide an external key line.

2523 APERIODIC RECEIVER SYSTEM, CS-24

Project Engineers: [REDACTED]

Fabrication of the five CR/A-4 receivers has been completed. The receivers will be ready for delivery upon completion of final checks. Considerable variation in output noise level has been noted. However, all units provided satisfactory S/N outputs. The frequency determining unit, IN-11, has been forwarded to SPS for evaluation. The prototype signal actuate device is ready for packaging.

Radiated interference tests were conducted on the M-8 recorder used in the CS-24 system. Tests indicated that a maximum of 75 mv/m of interference was detected at a distance of 3 feet. The interconnecting leads were the only sources of radiation.

2526 KEYER KE/B-9, CIRCUIT SIMPLIFICATION

Project Engineers: [REDACTED]

The KE/B-9 Keyer circuit is being reworked to take advantage of simplifications which became evident during the off-line keyer study. Drawings and an engineering model will be prepared for use in additional fabrication.

2528 PULSE WIDTH DETERMINATION STUDY

Project Engineer: [REDACTED]

Preliminary checks on a deltamax core, 1 mil thick, indicate that the core will cover the pulse width range from 0.1 to 10 usecs in three steps. However, suitable driving circuitry has not as yet been achieved. This project has been temporarily interrupted by the rework of the KE/B-9 Keyer. When resumed, experimentation will continue in an effort to optimize core turns and drive power requirements.

2529 OFF-LINE KEYER STUDY

Project Engineer: [REDACTED]

The Off-Line Keyer Study is nearing completion. Preliminary circuits are being blocked out in order to estimate material and labor costs. The report should be completed during May.

2530 RR-33 RECEIVER

Project Engineers: [REDACTED]

Twenty [REDACTED] receivers have been modified for operation in the 3 - 12mc band. An additional twenty units will be completed early in May.

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25X1A5a1

2531 [REDACTED] RECEIVER MODIFICATIONProject Engineer: [REDACTED]

25X1A9

25X1A5a1

A study was made to determine the feasibility of modifying the [REDACTED] receiver for operation in the 3 - 6 mc band without the necessity to repack the unit. Attempts were made to tune the RF and oscillator stages over the 3 to 6 mc range. Work has been completed and a report is being prepared.

2532 ONE WATT TRANSMITTER

Project Engineers: [REDACTED]

25X1A9

A project for the design of a one watt transmitter was initiated during this period. Work accomplished thus far has consisted only of preliminary considerations of configuration, volume, and power source.

No activity during this period on the following projects:

2003-2	Crystal Video Receiving System Investigation
2007-14	Low Noise Transistor Measurements
2007-41	Tape Recorder, Trix, Oscillator-Keyer Modification
2007-50	Support for TRO Reports
2069	Agent Radio Transmitter, RT/A-11A and RT/B-11A
2151	Conducting Glass Antenna
2508	Etched Antennas
2515	A-3 Modulator f/TA-1A Transmitter Adapter
2527	Voice Operated Relay for the KY-1
2629	IN-10 Calibrator
2639	CR-2X

SUPPLY ACTIVITIES

Fifty-nine requisitions, 909-554-59 thru 909-612-59, were submitted during this reporting period. Breakdown as to number and estimated cost on requisitions to Headquarters and Station "A" is as follows:

	<u># Rqns.</u>	<u># Line Items</u>	<u>Est. Cost</u>
25X1A6a			
Headquarters	16	317	\$38,436.67
[REDACTED]	43	77	6,334.55
Totals	59	394	\$44,771.22

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25X1A5a1

The major items through Headquarters were [REDACTED] M8-Stero tape recorder, remote control units and battery chargers at \$34,528.50; TP-3 motors at \$1,397.50; and RT-3's, RP-1's and Premax whip antennas at \$1,161.74; the Arwood castings at \$1,049.60 and Sonotone 24HL20 nicad cells at \$3,638.25 were the major expenses thru [REDACTED].

Reconciled extended values on the net change basis for the period 26 March 1959 thru 23 April 1959 were as follows:

Materiel Unit 3	\$ 285.50	25X1A6a
Materiel Unit 5	6,455.63	
Materiel Unit 7	66.47	
TOTAL	\$ 6,780.60	

There were no changes in materiel units one, two, four, and six. Total dollar value of all material groups thru 23 April 1959 is \$703,511.71.

[REDACTED]

25X1A9a

Chief, Research & Development Laboratory

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